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| **SCIENCE LONG TERM TRANSFER GOALS** | |
| Students will be able to independently use their learning to:   1. Approach science as a reliable and tentative way of knowing and explaining the natural world and apply this understanding to a variety of situations. 2. Weigh evidence and use scientific approaches to ask questions, investigate, make informed decisions about how they live their daily lives, and engage in their vocations and communities. 3. Make and use observations to identify and analyze relationships and patterns in order to explain phenomena, develop models, and make predictions. 4. Evaluate systems, including their components and subsystems, in order to connect how form determines function and how any change to one component affects the entire system. 5. Explain how the natural and designed worlds are interrelated and the application of scientific knowledge and technology can have beneficial, detrimental, or unintended consequences. | |
| **INQUIRY AND DESIGN BIG IDEAS AND ESSENTIAL QUESTIONS** | |
| **Big Ideas** | **Essential Questions** |
| Big Idea 1:  Asking questions, which arise in a variety of ways, is essential to developing scientific habits of mind. | *Why do scientists ask questions?* |
| Big Idea 2:  Scientists develop and use models to represent current understandings, aid in developing questions and experiments, and to communicate ideas to others. | *How do scientists develop and use models?* |
| Big Idea 3:  Scientists investigate and observe the world to systematically describe it and to develop and test theories and explanations about how the world works. | *What do scientists do to find out more about our world and how it functions?* |
| Big Idea 4:  In order to give meaning to their data, scientists and engineers organize and interpret it through tabulating, graphing, and statistical analysis. | *In what ways are data analyzed and interpreted?* |
| Big Idea 5:  Mathematics and computation tools are essential to science and engineering. | *How are the tools of mathematics utilized in doing science?*  *What are the benefits of mathematics for science?* |
| Big Idea 6:  Scientific theories are developed to provide explanations about the nature of particular phenomena, predicting future events, or making inferences about past events. | *Why are theories valuable constructs in helping scientists understand and explain our world?* |
| Big Idea 7:  Without the abilities to communicate findings accurately or learn about the findings of others, science and engineering cannot advance. | *How do scientists communicate to others in order to advance science and engineering?* |
| Big Idea 8:  Scientists must make critical judgments about their own work and that of their peers. | *In what ways do scientists ensure legitimacy of their work?* |